WHAT IS CLAIMED IS:

1. A liquid discharge apparatus having a head with a plurality of liquid dischargers including nozzles aligned in parallel in a row, comprising:

a main controlling unit formed on each liquid discharger, the main controlling unit controlling the discharge of droplets from the nozzles;

a secondary controlling unit formed on each liquid discharger, the secondary controlling unit controlling the discharge of a droplet so that the droplet is discharged along at least one secondary trajectory different from the main trajectories of the droplets discharged by the liquid dischargers controlled by the main controlling unit; and

a secondary-control executing unit for individually setting whether or not the secondary controlling unit for each liquid discharger is operated.

2. A liquid discharge apparatus having a head with a plurality of liquid dischargers including nozzles aligned in parallel in a row, comprising:

a discharge-direction changing unit for changing the trajectory of the droplets discharged from the nozzle of each liquid discharger in at least two different directions in the row; and

a reference-direction setting unit for selecting one of the trajectories of the droplets discharged from liquid dischargers controlled by the discharge-direction changing unit as a reference direction.

3. A liquid discharge apparatus having a head with a plurality of liquid dischargers including nozzles aligned in parallel in a row, comprising:

a discharge-direction changing unit for changing the trajectory of droplet discharged from the nozzle of each liquid discharger in at least two different directions in the row; and

a discharge-angle setting unit for selecting discharge angles for each droplet discharged from liquid dischargers controlled by the discharge-direction changing unit for each liquid discharger.

4. A liquid discharge apparatus having a head with a plurality of liquid dischargers including nozzles aligned in parallel in a row, comprising:

a discharge-direction changing unit for changing the trajectory of the droplet discharged from the nozzle of each liquid discharger in at least two different directions in the row;

a discharge-angle setting unit for setting discharge

angles for each droplet discharged from liquid dischargers controlled by the discharge-direction changing unit for each liquid discharger; and

a reference-direction setting unit for selecting one of the trajectories of the droplets discharged from liquid dischargers controlled by the discharge-direction changing unit as a reference direction.

5. A liquid discharger according to one of claims 2 to 4, further comprising,

a discharge controlling unit for controlling the discharge of ink droplets by the discharge-direction changing unit so that a pixel row or a pixel is formed by discharging droplets from at least two neighboring liquid dischargers, wherein droplets are discharged along different trajectories from at least two neighboring liquid dischargers to form a pixel row by landing on the same pixel row or to form a pixel by landing on the same pixel area.

6. A liquid discharger according to one of claims 2 to 4, further comprising,

a discharge controlling unit for controlling the discharge of a droplet by the discharge-direction changing unit so that the droplet lands in a landing position in a pixel area, wherein the landing position is one of M (where

M is an integer greater or equal to two) different landing positions aligned in a predetermined direction in the pixel area and at least a part of each of the M landing positions is included in the pixel area.

7. A liquid discharger according to one of claims 2 to 4, further comprising,

a first discharge controlling unit for controlling the discharge of ink droplets by the discharge-direction changing unit so that a pixel row or a pixel is formed by discharging droplets from at least two neighboring liquid dischargers, wherein droplets are discharged along different trajectories from at least two neighboring liquid dischargers to form a pixel row by landing on the same pixel row or to form a pixel by landing on the same pixel area; and

a second discharge controlling unit for controlling the discharge of a droplet by the discharge-direction changing unit so that the droplet lands in a landing position in a pixel area, wherein the landing position is one of M (where M is an integer greater or equal to two) different landing positions aligned in a predetermined direction in the pixel area and at least a part of each of the M landing positions is included in the pixel area.

8. A liquid discharger according to one of claims 2 to 4, further comprising,

a resolution increasing unit for increasing the number of pixels by controlling the droplets discharged from each liquid discharger so that the droplets land in at least two different positions in a predetermined direction whereby the number of pixels is increased in comparison with the number of pixels formed by droplets discharged from each liquid discharger landing in one position.

9. A liquid discharger according to one of claims 2 to 4, further comprising,

a resolution increasing unit for increasing the number of pixels by controlling the droplets discharged from each liquid discharger so that the droplets land in at least two different positions in a predetermined direction whereby the number of pixels increased in comparison with the number of pixels formed by droplets discharged from each liquid discharger landing in one position, and

a discharge controlling unit for controlling the discharge of ink droplets by the discharge-direction changing unit so that a pixel row or a pixel is formed by discharging droplets from at least two neighboring liquid dischargers, wherein each droplet is discharged along different trajectories from at least two neighboring liquid

dischargers to form a pixel row by landing on the same pixel row or to form a pixel by landing on the same pixel area.

10. A liquid discharger according to one of claims 2 to 4, further comprising,

a resolution increasing unit for increasing the number of pixels by controlling the droplets discharged from each liquid discharger so that the droplets land in at least two different positions in a predetermined direction whereby the number of pixels increased in comparison with the number of pixels formed by droplets discharged from each liquid discharger landing in one position; and

a discharge controlling unit for controlling the discharge of a droplet by the discharge-direction changing unit so that the droplet lands in a landing position in a pixel area, wherein the landing position is one of M (where M is an integer greater or equal to two) different landing positions aligned in a predetermined direction in the pixel area and at least a part of each of the M landing positions is included in the pixel area.

11. A liquid discharger according to one of claims 2 to 4, further comprising,

a resolution increasing unit for increasing the number of pixels by controlling the droplets discharged from each

liquid discharger so that the droplets land in at least two different positions in a predetermined direction whereby the number of pixels increased in comparison with the number of pixels formed by droplets discharged from each liquid discharger landing in one position;

a first discharge controlling unit for controlling the discharge of ink droplets by the discharge-direction changing unit so that a pixel row or a pixel is formed by discharging droplets from at least two neighboring liquid dischargers, wherein each droplet is discharged along different trajectories from at least two neighboring liquid dischargers to form a pixel row by landing on the same pixel row or to form a pixel by landing on the same pixel area; and

a second discharge controlling unit for controlling the discharge of a droplet by the discharge-direction changing unit so that the droplet lands in a landing position in a pixel area, wherein the landing position is one of M (where M is an integer greater or equal to two) different landing positions aligned in a predetermined direction in the pixel area and at least a part of each of the M landing positions is included in the pixel area.

12. A liquid discharge apparatus according to claim 1 having a plurality of liquid dischargers comprising a liquid

chamber containing the liquid, bubble generation units disposed inside the liquid chamber for generating bubbles in the liquid contained in the liquid chamber by supplying energy, and a nozzle member provided with nozzles for discharging the liquid contained in the liquid chamber in response to generation of bubbles by the bubble generation unit,

wherein a secondary controlling unit controls the main trajectory of a droplet discharged by supplying energy having a second value to the bubble generation units, the second value differs from a first value of the energy supplied to the bubble generation units by the main controlling unit, so that the secondary trajectory of the droplet differs from the main trajectory of the droplet controlled by the main controlling unit.

13. A liquid discharge apparatus according to claim 1 having a plurality of liquid dischargers comprising a liquid chamber containing the liquid, heating elements disposed in the liquid chamber for generating a bubble in the liquid contained in the liquid chamber by supplying energy, and a nozzle member provided with nozzles for discharging the liquid contained in the liquid chamber as a bubble is generated by the bubble generation unit, wherein

a plurality of heating elements is aligned in parallel

in a row in the liquid chamber and each heating element is serially connected, and

the secondary controlling unit includes a circuit with a switching element connected to the serial connection between the heating elements and controls the main trajectory of a droplet by supplying an electrical current via the circuit to the connection between the heating elements or by supplying an electrical current from the connection to the heating elements to control the electrical current supplied to the heating elements, so that the secondary trajectory differs from the main trajectory controlled by the main controlling unit.

14. A liquid discharge apparatus according to one of claims 2 to 4 having a plurality of liquid dischargers comprising a liquid chamber containing the liquid, bubble generation units disposed inside the liquid chamber for generating a bubble in the liquid contained in the liquid chamber by supplying energy, and a nozzle member provided with nozzles for discharging the liquid contained in the liquid chamber as a bubble is generated by the bubble generation unit,

wherein the discharge-direction changing unit comprises a main controlling unit for controlling the discharge of droplets from nozzles by supplying energy to the bubble

generation unit and a secondary controlling unit for controlling the trajectory of a droplet discharged by supplying energy having a second value to the bubble generation units, the second value differs from a first value of the energy supplied to the bubble generation units by the main controlling unit, so that the trajectory of the droplet differs from the trajectory of the droplet controlled by the main controlling unit.

15. A liquid discharge apparatus according to one of claims 2 to 4 having a plurality of liquid dischargers comprising a liquid chamber containing the liquid, heating elements disposed inside the liquid chamber for generating a bubble in the liquid contained in the liquid chamber by supplying energy, and a nozzle member provided with nozzles for discharging the liquid contained in the liquid chamber as a bubble is generated by the bubble generation unit, wherein

a plurality of heating elements is aligned in parallel in a row in the liquid chamber and each heating element is serially connected, and

the discharge-direction changing unit includes a circuit with a switching element connected to the serial connection between the heating elements and controls the trajectory of a droplet discharged from the nozzles by

controlling the electrical current supplied to the heating elements by supplying an electrical current via the circuit to the connection between the heating elements or by receiving an electrical current from the connection between the heating elements, so that at least two different trajectories can be selected in a predetermined direction.

16. A method for discharging liquid from nozzles with a liquid discharger formed on a plurality of heads aligned in parallel in a row, comprising the steps of:

performing the main control of the discharge of droplets from the nozzles of each liquid discharger;

performing the secondary control of the discharge of droplets from each liquid discharger along at least one trajectory different from the trajectory of the main control in a row; and

determining whether or not the secondary controlling unit is operated is determined for each liquid discharger.

17. A method for discharging liquid from nozzles with a liquid discharger formed on a plurality of heads aligned in parallel in a row, comprising the steps of:

selecting the trajectory of droplets discharged from the nozzles of each liquid discharger from at least two different trajectories in a predetermined direction; and

selecting one of the trajectories as a reference trajectory.

18. A method for discharging liquid from nozzles with a liquid discharger formed on a plurality of heads aligned in parallel in a row, comprising the steps of:

selecting the trajectory of droplets discharged from the nozzles of each liquid discharger from at least two different trajectories in a predetermined direction; and

setting the discharge angle of the droplets independently for each liquid discharger.

19. A method for discharging liquid from nozzles with a liquid discharger formed on a plurality of heads aligned in parallel in a row, comprising the steps of:

selecting the trajectory of droplets discharged from the nozzles of each liquid discharger from at least two different trajectories in a predetermined direction;

selecting one of the trajectories is selected as a reference trajectory; and

setting the discharge angle of the droplets independently for each liquid discharger.